Management and Conservation of Mountain Caribou Habitat in the Cariboo Region

Special Investigation 970137

Forest Practices Board

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Table of Contents

The Investigation 1

Background 1

Investigation Findings 3

Conclusions 12

Commentary 12

Recommendations 13

The Investigation

This special investigation is about whether operational plans in an area used by caribou in early winter met the requirements of the *Forest Practices Code of British Columbia Act*, its regulations and its guidebooks (the Code).

The Board initiated this investigation to address concerns that were identified during, but outside the scope of, a previous Board investigation of FDP consistency with the *Cariboo-Chilcotin Land Use Plan: FPB/SIR/06, Implementation of the Cariboo-Chilcotin Land Use Plan in Forest Development Plans*. The complainant in that previous investigation believes that several recently approved operational plans will result in damage to habitat used by caribou in early winter.

The Board limited this investigation to the approval of two operational plans: 1) an amendment to West Fraser Mills Ltd.'s 1999-2003 FDP (forest licence A20021) for the area of cutting permit 61, block 1 (CP 61-1), and 2) the silviculture prescription for CP 61-1. The Board selected those plans because concerns regarding them were more prevalent than for the other recently approved plans in areas with early winter habitat for caribou. The operational plans are not necessarily representative of the overall management of early winter habitat areas in the Cariboo Forest Region. However, the issues involved may be applicable to other areas used by caribou in early winter.

Background

Mountain caribou are an ecotype of woodland caribou, found almost entirely in southeastern British Columbia. The status of mountain caribou has recently been raised to "red listed" by the Ministry of Environment, Lands and Parks (now the Ministry of Water, Land and Air Protection), meaning that the caribou are threatened or endangered. Nationally, these animals have been designated as "threatened" by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

There are presently about 2,500 mountain caribou in the province, distributed in 13 sub-populations. About 200-300 of these mountain caribou inhabit the mature forests and alpine areas in the eastern portion of the Cariboo Forest Region. The *Cariboo-Chilcotin Land-Use Plan* (CCLUP) states that these caribou are at risk and that the regional population is of considerable provincial significance and a high provincial wildlife priority.

Some of these caribou use low-elevation (early winter) habitat from October to mid-January where they initially feed on plants on the ground, and later on arboreal lichen from litter fall and wind thrown trees as snow pack increases. The caribou using the low elevation habitat move to higher elevations later in winter when the snow pack at higher elevations deepens and hardens, allowing them to reach tree lichens, their principle source of food in winter.

Studies have indicated that caribou need habitat that provides forage as well as protection from predators. However, government, forest companies and technical specialists had not yet reached consensus on how to manage these early winter habitats.

Features that provide habitat are arboreal lichen provided by cedar-hemlock stands, understory that includes low evergreen shrubs, and conifers that intercept snow. Three features reduce the risk of predation. First, safe habitat has few attributes that attract other ungulates and their predators. Winter habitats that support palatable browse species attract moose that, in turn, attract predators such as wolves, which also prey on caribou. Second, safe habitat has an open understory. Caribou avoid dense immature stands and places where they cannot see or move easily. Third, safe habitat must cover a large area. The risk of caribou encountering predators is reduced when they are spread out.

Proposals affecting 1,400 hectares of forest used by some caribou in early winter were submitted for approval in recent FDPs. CP 61-1 is one of those proposals. The area of the proposed harvesting is located along the north arm of Quesnel Lake, approximately 100 kilometres northeast of Williams Lake. The district manager and the designated environment official (the statutory decision-makers) approved CP 61-1 in the licensee's 1998-2002 FDP (FDPs for that area required joint approval by the district manager and the designated environment official). The plan prescribed harvesting about one half of the total area of 265 hectares, using evenly distributed small clearcut patches of two to five hectares. That approach, designed in consultation with the Ministry of Water, Land and Air Protection staff (previously Ministry of Environment, Lands and Parks) was intended to allow harvesting while retaining characteristics needed by the caribou.

The licensee found that a similar small-block approach, used in a nearby area, was uneconomical. The licensee therefore reconsidered the plan after receiving approval. The licensee proposed to clearcut the area with a reserve in its 1999-2003 FDP. The district manager and the designated environment official rejected that proposal as not adequate for caribou.

The licensee then proposed an amendment to the 1999-2003 FDP to retain or potentially retain additional standing timber in CP 61-1. The amendment affected 256 hectares, consisting of a large clearcut unit, two partial harvest (variable retention) units and a wildlife tree patch. The amendment allowed for more harvesting and larger openings within CP 61-1 than did the 1998 FDP. However, the amendment provided for retaining poor quality timber within the clearcut "where suited". This "wildlife tree in flux" concept gave the licensee discretion to retain additional wildlife tree patches in the clearcut unit, depending on operational considerations.

The statutory decision-makers met several times with the licensee, sought input from a technical committee, and visited a nearby area with a similar timber type. The designated environment official concluded that the FDP amendment with "modified harvest and enhanced stand retention reduces somewhat the risk to adequate management and conservation of caribou habitat posed by harvesting in this area". The statutory decision-makers therefore approved the amendment in March 1999.

The district manager approved the silviculture prescription in May 1999 (he had sole approval authority for the silviculture prescription). The licensee started harvesting shortly thereafter, and completed harvesting in the fall of 1999. Of the total area of 256 hectares, 57 percent was clearcut. The licensee completely harvested the clearcut unit, and did not retain additional patches of poor quality stems. The clearcut is interspersed with the partial harvest units. There was limited harvesting carried out within the partial harvest units.

Investigation Findings

The investigation addresses the following questions:

1. Did the operational plans comply with the Code's requirements for managing wildlife habitat and ungulate winter ranges?

2. Did the approvals of the operational plans comply with the Code's requirement for adequately managing and conserving forest resources?

3. Were the decisions to approve the operational plans appropriate?

4. Were the operational plans consistent with the higher level plan?

In this report, "operational plans" refers collectively to the FDP amendment and the silviculture prescription.

1. Did the operational plans comply with the Code's requirements for managing wildlife habitat and ungulate winter ranges?

The Code provides two specific methods that could be used to manage for caribou and caribou habitat. One method is for the chief forester and deputy minister of Water, Land and Air Protection (MWLAP) to designate wildlife habitat areas for identified species at risk, and then establish management practices applicable to those areas. Alternatively, they can designate habitat as winter range necessary for the survival of an ungulate species and establish management objectives for the winter range. The Code requires licensees to identify designated wildlife habitat and ungulate winter range areas in operational plans and to describe their management objectives. However, no wildlife habitat areas or ungulate winter ranges have been designated for the area of CP 61-1. The Code's provisions for managing such areas did not apply to the FDP amendment or the silviculture prescription.

2. Did the approvals of the operational plans comply with the Code's requirement for adequately managing and conserving forest resources?

Under section 41 of the Act, a district manager cannot approve an operational plan unless satisfied that it will adequately manage and conserve forest resources for the area of the plan. If "satisfied," and if other Code requirements are met, a district manager must approve the operational plan. Forest resources include caribou habitat values for the area of the plan. A similar requirement, to be satisfied, applies to the designated environment official for

operational plans that cover an area requiring joint approval. In this case, joint approval was required for the FDP amendment but not the silviculture prescription.

The designated environment official's and district manager's submissions to the Board state that they were satisfied, at the time of approval, that the amendment to the FDP adequately managed and conserved forest resources. The district manager also stated that he was satisfied that the silviculture prescription adequately managed and conserved forest resources. The evidence is that the statutory decision makers considered a variety of information to assess whether the plans adequately managed and conserved forest resources. Their approval of the operational plans therefore complied with the Code requirement that they be "satisfied."

3. Were the decisions to approve the operational plans appropriate?

The Code provides a statutory decision maker with discretion to decide whether an operational plan adequately manages and conserves forest resources and should be approved. The Board considers whether the statutory decision makers exercised their discretion appropriately for the circumstances of the complaint. The Board does so by considering whether their decisions to approve the plans were based on the consideration of adequate, relevant information and sound reasoning.

(i) The forest development plan amendment

The district manager and designated environment official both had to decide whether to approve the amendment. The district manager relied on the advice of the designated environment official to assess the amendment's potential effect on the caribou. He did so because MWLAP had expertise in managing wildlife. The investigation therefore considers the designated environment official's rationale for approving the amendment.

The designated environment official's approval of the amendment states in part:

> In my opinion your additional planning for modified harvest and enhanced stand retention reduces somewhat the risk to adequate management and conservation of caribou habitat posed by harvesting in this area. I have also considered that monitoring of the harvest operations and post harvest conditions will yield important information for future planning in caribou habitat and other sensitive areas of the Horsefly Forest District. In making this decision I have also considered forest harvesting economics and the requirement of the Higher Level Plan.

The designated environment official explained his rationale in more detail in a later submission to the Board. The Board examined key information considered by the designated environment official to determine if his reasoning was sound. Information specific to the caribou included:

- the CCLUP and interim strategies;

- the critical nature of early winter habitats;
- recommendations of the caribou committee;
- retention of poor quality stems in the clearcut for the area of CP 61-1; and
- the area affected by CP 61-1 relative to the total early winter habitat available.

The CCLUP and interim strategies

The designated environment official's comments demonstrate that he considered the CCLUP and the interim strategies in his assessment of the amendment to the FDP. He determined that the amendment is consistent with the CCLUP and the interim strategies.

The CCLUP in its entirety provides policy guidance for managing forest resources in operational plans. The CCLUP contains a number of provisions for managing caribou and wildlife, including:

- These caribou are at risk and the regional population is of considerable provincial significance. The central position of the Cariboo region, in relation to the distribution of the mountain caribou, makes this population a high provincial wildlife priority. The overriding objective is to maintain habitat values for mountain caribou within the caribou region. (p. 156)
- Habitat for regionally significant wildlife species: including mule deer and caribou will be maintained, consistent with the Forest Practices Code and the application of the polygon-specific resource targets. (p. 178)
- Minimize physical and ecological barriers to wildlife movement patterns by maintaining a variety of habitat types across the landscape, giving emphasis to the availability, integrity and connectivity of both forest interior and riparian habitats. (p. 179)

The CCLUP provides limited guidance on how to manage areas used by caribou in early winter to achieve the above general objectives, particularly the objective to maintain caribou habitat values. Instead, it anticipates that guidance will be provided through the development of strategies. Draft interim strategies for caribou management were prepared in 1996 and 1998 by a committee of MWLAP and MOF biologists (the caribou committee).

The interim strategies proposed five areas for designation as early winter range areas. None of the five areas include CP 61-1. The strategies do not specify management actions for the area of CP 61-1 but instead recommend addressing caribou requirements for that general area through sub-regional planning or provisions of the Code. Consequently, the interim strategies provided limited guidance to statutory decision-makers regarding how to manage caribou habitat values for the specific area of CP 61-1. The Board finds that the amendment is consistent with the

limited guidance provided by the interim strategies for managing caribou habitat values under the CCLUP.

The Board notes that those interim strategies are not intended to conclude issues regarding caribou management. For example, the interim strategy states that additional early winter range areas may be identified in the future. Such additional early winter ranges would then presumably be incorporated into the final strategy, which was due for release at the end of 2000. A final strategy had not been developed and approved at the time the FDP amendment was approved. Given the prominence that the CCLUP places on maintaining caribou habitat, the Board believes that operational plans in early winter habitat areas should be managed using an approach that minimizes risk. Operational plans for areas used by caribou should keep management options open until the final strategy is developed. Such an approach should be used for the remaining area of CP 61-1, which radio-collar telemetry results show is used by caribou.

The critical nature of early winter habitat areas

The designated environment official's assessment considered whether caribou need early winter habitat areas to survive. He stated:

> I found that the information on the critical nature of this habitat was not available. The work to date in this region has focused on the use of lower elevation habitats by caribou and has not attempted the difficult task of determining whether or not this use is critical for the maintenance of caribou. I also recognized that there is disagreement among the published experts on this point for caribou in B.C. in general. I also noted that not all caribou use the low elevation habitat during the early winter period; many remain at higher elevations.

The designated environment official's assessment questioned how critical early winter habitat was to the survival of the caribou. The Board carried out its own review of published studies[1], which confirmed the designated environment official's position that not all caribou use low elevation habitat during early winter. The caribou in the vicinity of CP 61-1 spend, on average, 22 percent of their time in low elevation habitat during early winter. Most studies of the caribou reveal that individuals have variable patterns of commitment to early winter habitat. Some individuals move predictably between summer and winter habitats, some reside in the same geographic area, and others wander with no obvious pattern. The occurrence of various behavioural types within a single population probably plays an important role in the survival of the population as a whole by allowing the caribou to adapt to changing conditions.

The designated environment official said he was not convinced that early winter habitat was critical for the maintenance of caribou, in part because published experts disagreed on that point. The Board's review found that published studies do not assess whether early winter habitat is critical for the survival of the caribou. However, all of the studies indicate the

importance of low elevation winter habitats: none suggest that low elevation habitats are unimportant. The Board's opinion is that the designated environment official's assessment did not sufficiently recognize studies indicating the importance of early winter habitat.

Recommendations of the caribou committee

The statutory decision-makers sought information from the caribou committee to assist in their evaluation of the FDP amendment. They asked the committee to provide an analysis of the relative risk of applying various management approaches to the entire winter habitat. The committee provided that analysis, and also recommended deferring current harvesting proposals in potential early winter habitats until the completion of a final strategy in 2000. The committee stated that any further increments in risk to caribou habitat, even if they are limited to early winter range, are of great concern.

The designated environment official found that the committee's analysis did not indicate risk for applying a particular prescription to a small portion of the available early winter habitat. His assessment of the amendment therefore did not place much weight on the analysis. He also did not follow the committee's recommendation to defer harvesting in early winter habitat areas, stating that he had no authority to do so.

The Board agrees that the committee's risk analysis was of limited value for assessing specific operational plans such as the amendment for CP 61-1. The Board also agrees that the designated environment official had no authority to establish a harvesting deferral area. His authority was restricted to assessing compliance with the Code, including the requirement to adequately manage and conserve forest resources. The Board believes that an important consideration for assessing whether the amendment would adequately manage and conserve is that there was no final strategy in place. Harvesting CP 61-1, prior to completing the final strategy, would restrict future management options for that specific area. It is the Board's opinion that, given the caribou committee's concerns, statutory decision-makers should carefully assess harvesting proposals in early winter habitat to keep management options open until a final strategy is developed.

Retention of poor quality stems in the clearcut area of CP 61-1

The designated environment official believed that retaining poor quality trees within the proposed clearcut unit was important for addressing caribou habitat values. He believed that the amendment, which provided the option to retain patches of poor quality stems within the clearcut, could achieve that retention.

The designated environment official assessed the risk of the amendment compromising caribou habitat (i.e. the risk of not achieving the desired retention) over the area of CP 61-1. He determined that the amendment had a moderate risk of compromising caribou habitat within the specific block because of the lack of certainty about the amount and distribution of poor quality timber that was available. He noted past harvesting experience was that similar cedar-hemlock stands typically have very large areas of poor quality cedar. A staff biologist advised

that the "risk for CP 61 may be reasonable under the circumstances" because he was confident that the area had a significant representation of poor quality timber. He also noted that the FDP amendment had a reasonable potential to induce the mosaic of habitat conditions that would be suitable for caribou use. Past experience and staff advice indicated to the designated environment official that the amendment's option to retain poor quality stems had a moderate risk of compromising caribou habitat within the area of that specific block.

The Board notes that the amendment provided the option for, but did not require, retaining poor quality stems in the clearcut portion. The amendment therefore allowed for a wide range of outcomes. There was a risk that stems would not be retained in the clearcut portion because of uncertainty regarding the availability of poor quality stems. That uncertainty was, in part, due to the designated environment official not having site-specific data describing the amount or distribution of poor quality timber available within the area of CP 61-1. He and the district manager had visited a similar stand located one kilometre away, but not the specific area of CP 61-1.

The availability of poor quality stems was also uncertain because timber merchantability is subjective and dependent on market conditions. Improving prices for cedar could result in no poor quality stems being available over the area. The amount of retention provided by the FDP amendment would therefore be determined by harvesting economics, rather than by the needs of the caribou. The Board considers that timber merchantability is an unreliable criterion for managing the habitat needs of the caribou.

Although the availability of poor quality timber was uncertain, the Board accepts that the uncertainty was mitigated by post-harvest experience with timber quality in similar stands, and the advice of MOF staff. The Board finds that the designated environment official's assessment that the amendment presented a moderate risk of compromising caribou habitat within the area of that specific block was logical.

Area affected by CP 61-1 relative to the total early winter habitat available

The designated environment official observed that there had been little previous logging in that portion of the North Arm of Quesnel Lake. He noted that the caribou committee, in its analysis, indicated that 55,000 hectares of cedar-hemlock forest remained in the general area. He therefore concluded that the amendment's risk relative to the total early winter habitat was low. He concluded that, although the amendment had a moderate risk of compromising caribou habitat within the area of the specific block, the overall risk was low because "the treated area was small relative to the area available as caribou habitat and there was no intention to apply the approach more broadly at this time."

The Board notes that CP 61 -1 affected less than 1 percent of the 55,000 hectares of available mature cedar-hemlock type. CP 61-1, combined with the other harvesting proposals in areas used in early winter by caribou, affected 1,400 hectares or 2.5 percent of the available cedar-hemlock type. However, the caribou committee stated that the caribou do not use all of the

available cedar-hemlock type. Instead, the caribou generally seek cedar-hemlock forests that are older (age class 8 or greater) with reasonable crown closure (crown closure class 5 or greater) on gentle slopes (less than 46 percent).

The committee further advised that, while the area proposed for cutting was small relative to the total amount of mature cedar-hemlock available, the harvesting proposals affecting 1,400 hectares all overlap areas of identified early winter habitat use. The designated environment official's evaluation of risk was based on the total 55,000 hectares of cedar-hemlock available, rather than the portion of cedar-hemlock with suitable habitat characteristics or identified caribou use. The designated environment official's assessment of risk gave insufficient weight to advice that the caribou seek cedar-hemlock forests with certain characteristics, and that the harvesting proposals were in areas of known caribou use.

Summary – were the decisions to approve the forest development plan amendment appropriate?

All of the preceding discussion in section 3(i) is relevant for assessing whether it was appropriate for the statutory decision makers to be satisfied that the FDP amendment adequately managed and conserved caribou habitat values.

Some Board members maintain that the designated environment official underestimated the amendments' overall risk to the caribou. This is of concern particularly given the importance that the higher level plan places on maintaining caribou habitat values. The designated environment official's assessment did not sufficiently recognize studies indicating the importance of early winter habitat; did not heed the caribou committees' great concern for any further incremental risk to caribou in early winter habitat areas; and gave insufficient weight to the habitat characteristics preferred by caribou in cedar-hemlock forests. While he believed there was a moderate risk that the poor quality stems required to provide caribou habitat would not be retained, this FDP amendment still allowed for the option of 100 percent clearcut, which had already been rejected in a previous FDP amendment submission. Those Board members therefore conclude that it was inappropriate for the statutory decision makers to be satisfied that the FDP amendment adequately managed and conserved caribou habitat resources. While risk could have been further reduced through measures specified in the silviculture prescription, the FDP amendment was the only plan where the designated environment official had the authority, through joint approval, to ensure the needs of the caribou were addressed.

Other Board members believe that, although a final caribou strategy was not in place, the designated environment official adequately assessed the amendment's risk to caribou. The designated environment official did request guidance from the caribou committee, although that was of limited value in assessing the amendment for CP 61-1. Past harvesting experience mitigated the designated environment official's uncertainty about the availability of poor quality timber and the potential for retaining it as suitable habitat for caribou. In addition, the next level of planning (the silviculture prescription) provided a means to ensure the option of retaining suitable caribou habitat on the ground. Those Board members therefore considered

that it was appropriate for the designated environment official to be satisfied that the amendment would adequately manage and conserve forest resources.

The Board did not reach consensus on whether the decisions to approve the FDP amendment were appropriate. However, all Board members agree that because the FDP amendment allowed for a wide range of outcomes, it was important for the silviculture prescription to address the needs of the caribou by clearly stating the desired end result.

(ii) The silviculture prescription

Under the Code, the district manager had sole authority to decide whether the silviculture prescription would adequately manage and conserve forest resources and should be approved. The district manager assessed the prescription in part by applying the same process used by the designated environment official to evaluate the FDP amendment. He also considered advice from MWLAP specific to the silviculture prescription. A MWLAP biologist was concerned that, without detail on residual stand structure, the protection of caribou habitat intended by the FDP might not be implemented. The biologist recommended to the district manager that the silviculture prescription specify the desired end result for the clearcut unit.[2] The district manager did not reject the silviculture prescription and return it to the licensee for revision. Instead, the district manager developed an alternative approach in consultation with the designated environment official. That approach attempted to provide additional protection for caribou habitat by making his approval subject to conditions. His approval letter stated:

> I give approval of the silviculture prescription with the requirement that any identifiable patches of poor quality timber in Standards Unit A will be left untreated during harvest operations in order to mitigate impacts on caribou habitat. The silviculture prescription will be amended at a later date (post harvest) to show the actual location of these additional leave areas. We anticipate that Ministry of Forests and Ministry of Environment will collaborate with West Fraser Mills Ltd. to monitor this harvest, with special reference to the poor quality stands in Unit A, as it will provide valuable information for future planning.

The Board's opinion is that it was important for the silviculture prescription to ensure that the retention intended by the FDP amendment was implemented. With the broad range of potential outcomes allowed by the amendment, that was not ensured. The district manager's conditions on approval did not require a minimum level of retention in the clearcut area by specifying an amount or characteristics of retention. The conditions also did not provide a means for assessing if the amount or characteristics of residual stems left was suitable for caribou habitat. In any event, the Code does not allow the district manager to make the approval of the silviculture prescription subject to a condition. While the silviculture prescription was consistent with the broad range of potential outcomes allowed by the FDP amendment, for the above reasons, the district manager's conditions for approval of the silviculture prescription did not ensure that poor quality stems would be retained in the clearcut.

The Board also notes that the silviculture prescription did not map the location of partial harvest units, intending for the boundaries of those areas to be flexible with "the potential for them to shift across the landscape." As such, it did not ensure that the partial harvest units would be located in a manner that would minimize barriers to wildlife movement patterns, as per the CCLUP objective.

The FDP amendment provided for a full range of options for retention to provide for caribou habitat. The conditions that the district manager attempted to impose on the silviculture prescription, to ensure an appropriate level of retention, were inadequate and unenforceable. The Board therefore finds that it was inappropriate for the district manager to have been satisfied that the silviculture prescription would adequately manage and conserve caribou habitat values.

4. Were the operational plans consistent with the higher level plan?

The CCLUP, in its entirety, is a policy document intended to guide resource management. It is not, of itself, legally enforceable. However, specific parts of the CCLUP that are declared by the ministers to be a higher level plan create legal obligations under the Code. Section 10(1)(d) of the Code requires that operational plans be consistent with higher level plans.

The Board interprets that the higher level plan portion of the CCLUP includes the three bulleted objectives described on page 6 of this report, including "The overriding objective is to maintain habitat values for mountain caribou within the Cariboo Region."

Some Board members are of the opinion that both the FDP amendment and silviculture prescription were consistent with the higher level plan's general objectives for caribou. That is because the interim caribou strategies provided management advice for achieving the objectives of the CCLUP, including the above higher level plan objectives. As noted earlier in this report, the FDP amendment was consistent with the interim strategies.

Other Board members are of the opinion that the operational plans were not consistent with the higher level plan's general objectives They note that the interim strategies could be used by licensees and statutory decision-makers as guidance, but they did not override the higher level plan's direction to maintain caribou habitat values. Even if the interim strategies did not apply to caribou in a particular circumstance, the statutory decision-makers were still required to meet the higher level plan requirements.

Further, they note that caribou use was documented at the CP 61-1 location prior to plan approval, so this site was known by the licensee and the statutory decision-makers to contain caribou habitat. The operational plans both allowed the option of clearcutting large portions of caribou habitat in CP 61-1. The licensee and statutory decision-makers knew that clearcutting renders forest habitat unsuitable for caribou early winter use for a substantial period. The option to clearcut was thus inconsistent with the higher level plan objective of maintaining caribou values. Some Board members, therefore, are of the opinion that the operational plans, which included an option that would not maintain caribou habitat values, were inconsistent

with the higher level plan and did not comply with section 10(1)(d) of the Act. It follows that approval of both plans also did not comply with section 41(1)(3), which requires that an operational plan can be approved only if it meets the requirements of section 41(1), including that the plans were prepared in accordance with the Code.

The Board therefore did not reach consensus regarding whether the operational plans complied with section 10(1)(d) of the Code.

Conclusions

The operational plans complied with the Code's requirements for managing wildlife habitat areas and ungulate winter ranges because no such areas had been designated for the vicinity of CP 61-1.

The statutory decision makers' approvals of the operational plans complied with the Code requirement that they be satisfied that the plans adequately manage and conserve forest resources.

The Board did not reach consensus and does not conclude on whether it was appropriate for the statutory decision makers to be satisfied that the amendment to the FDP adequately managed and conserved caribou habitat values.

The Board finds that it was inappropriate for the district manager to be satisfied that the silviculture prescription adequately manage and conserve caribou habitat values.

The Board did not reach consensus and does not conclude on whether the operational plans were consistent with higher level plan's provisions for managing caribou habitat.

Commentary

Both the current designated environment official and district manager are dissatisfied with the result of CP 61-1 on the ground. The designated environment official had expected more retention of poor quality stems in the clearcut unit. He notes that the block now lacks connectivity, and that the clearcut area may impede the movement of caribou as it regenerates. The district manager said that he would not approve a similar proposal again. His opinion is that continued harvesting in such a manner would be detrimental to the long-term sustainability of the caribou population. Caribou specialists from the Ministry of Water, Land and Air Protection (formerly Environment, Lands and Parks) stated that the area of CP 61-1 now has little remaining value for caribou habitat due to the large openings and lack of connectivity between retained patches.

The operational plans for CP 61-1 did not achieve the level of retention intended by the statutory decision-makers. In contrast with the statutory decision-makers, the licensee is satisfied with the outcome, believing it to be consistent with the "clear understanding by all parties of the intent provided by the flexibility in the prescription wording and the range of potential outcomes." The Board notes that the end result was very similar to what had been proposed in the rejected FDP amendment. The failure to achieve the decision-makers' intended end result, and disagreement about whether the end result is in fact a failure, demonstrate the importance of clearly stating expected results in operational plans. A results-based approach to operational plans that expresses desired outcomes in practical and measurable terms is especially important when dealing with special resource values, such as wildlife species at risk.

The role of a FDP is to provide clarity around the objectives for managing resources. It should preferably specify a desired, measurable end result. The silviculture prescription then provides the details necessary to meet the stated end result. In this case, the FDP amendment does not specify the desired end result in measurable terms (i.e. the desirable level of retention), and the silviculture prescription does not provide the specific measures to achieve an intended end result. The Board believes that doing so could have simplified planning for CP 61-1 by allowing unnecessary detail provided in the FDP amendment to be eliminated and more appropriately provided for in the silviculture prescription.

The Board did not investigate the implementation of the silviculture prescription. However, the Board notes the importance that the statutory decision makers placed on monitoring. The designated environment official's approval of the FDP amendment considered that monitoring of the harvest operations and post harvest conditions would yield important information for future planning in caribou habitat. The district manager's approval of the silviculture prescription states "We anticipate that Ministry of Forests and Ministry of Environment will collaborate with West Fraser Mills Ltd. to monitor this harvest, with special reference to the poor quality stands in Unit A, as it will provide valuable information for future planning". However, neither MWLAP nor MOF staff monitored the amount of retention during harvesting operations. The Board considers the failure to monitor harvesting unacceptable, given the provincial significance of the caribou and the intended experimental nature of the operational plans.

Recommendations

In accordance with section 185 of the Act, the Board makes the following recommendations:

1. To ensure that intended end results are achieved, the Board recommends that licensees clearly specify in their operational plans the desired end result in practical and measurable terms and the measures necessary to achieve those results, especially when dealing with important resource values such as wildlife species at risk. Further, these intended results need to be clearly communicated from the planners to the field staff.

2. Habitat suitability criteria are an important measure of the availability of wildlife habitat. The Board recommends that statutory decision makers consider habitat suitability criteria when assessing whether operational plans adequately manage and conserve wildlife habitat.

3. The "wildlife tree in flux" approach of the FDP amendment was intended as an innovative management approach to address both harvesting economics and the needs of the caribou. The Board recommends that innovative approaches should be tested on a small scale so that, if not successful, the impact on forest resources will be limited. Planning and implementation should be sufficiently rigorous to ensure that learning occurs. Specifically, a licensee should provide justification for the innovative approach used in its operational plans. The licensee and reviewing agencies should closely monitor the implementation of the plans and evaluate the results.

4. The Board recommends that government clarify the *Cariboo-Chilcotin Higher Level Plan* objectives regarding caribou habitat values to provide unambiguous direction to operational plans.

www.fpb.gov.bc.ca

1 D. Eastman and S. Stevenson, 2000. The importance of early winter range to the mountain ecotype of caribou (Ranger tarandus) in the Caribou Forest Region of BC: a review of pertinent literature, 30 pages. Report commissioned by Forest Practices Board.

2 Staff expressed these concerns at least once prior to the district manager's approval.